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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,012	04/07/2004	Glenn G. Daves	FIS920010103US2	3011
29371	7590	06/30/2005	EXAMINER	
CANTOR COLBURN LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			POMPEY, RON EVERETT	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EL

<b>Office Action Summary</b>	Application No. 10/709,012	Applicant(s) DAVES ET AL.	
	Examiner Ron E. Pompey	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 7 is/are allowed.  
 6) ☒ Claim(s) 1-4 and 6 is/are rejected.  
 7) ☒ Claim(s) 5 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Corisis et al. (US 6,072,233).

Corisis discloses the limitations of:

connecting the first grid to a first translation layer(12, fig. 4)within the module, said first translation layer translating the points in the first grid (20, fig. 4) in a first direction;

connecting a second translation layer (52, fig. 5) between said first translation layer and the second grid, said second translation layer translating the points in the first grid in a second direction, said second direction being orthogonal to said first direction; and

configuring said first and second translation layers so as to fan signals out from the first grid to the second grid (the terminal pads in layer 12 of figure 9 are connected to vias(32) to solder balls(28) of the semiconductor die on another layer; like connecting fig.2 to fig 9);

wherein: said first translation layer (12, fig. 5) is configured to include a first plurality of signal interconnects, said first plurality of signal interconnects each having a jog line elongated (30, fig. 3) along an x-axis direction;

said second translation layer (52, fig. 5) is configured to include a second plurality of signal interconnects, said second plurality of signal interconnects each having a jog line (30, fig. 3) elongated along y-axis direction;

wherein: each of said jog lines in said first plurality of signal interconnects is disposed between an upper via contact (32, fig. 3) and a lower via contact (32, fig. 3) in said first translation layer;

each of said jog lines in said second plurality of signal interconnects is disposed between an upper via contact and a lower via contact in said second translation layer;

wherein: each individual upper via contact in said first translation layer is in electrical communication with a corresponding point in the first grid;

each individual lower via contact in said first translation layer is in electrical communication with a corresponding upper via contact in said second translation layer;

and

each individual lower via contact in said second translation layer is in electrical communication with a corresponding point in the second grid (fig. 11; col. 4, ln. 54 – col. 6, 42 and col. 7, lns. 11-24 ).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2812

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corisis et al. (US 6,072,233) as applied to claims 1-4 above.

Corisis fails to disclose the limitations of wherein: said second grid comprises a logic service terminal (LST) grid. Corisis discloses the first and second grid comprising C4 grids and also the second grid is used as an LST/via grid, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the second grid of Corisis to function as an LST/via grid since it routes the electrical connection of one substrate terminal to another substrate terminal.

#### ***Allowable Subject Matter***

5. Claim 7 is allowed.

6. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, either singly or in combination, fails to disclose the limitations of: further comprising: configuring a first plurality of power busses in said first translation layer, disposed along said x-axis direction; and configuring a second plurality of power busses in said second translation layer, disposed in said y-axis direction.

#### ***Response to Arguments***

8. Applicant's arguments filed 4-15-05 have been fully considered but they are not persuasive. Applicant argues that Corisis does not disclose a configuration where the signals from the first to second grid fan out. However if the terminals(20) in figure 2, through vias 32 which are not pitched evenly, are to connect to the terminals 20/28 in figure 9 areas 29 and 31 then the signals have to fan out.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E. Pompey whose telephone number is (571) 272-1680. The examiner can normally be reached on compressed.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone

Art Unit: 2812

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ron Pompey  
AU: 2812  
June 26, 2005

  
**HA NGUYEN**  
**PRIMARY EXAMINER**